UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/720,092	09/27/96	KAHN R	07039/002001

LM02/0902

DAVID L FEIGENBAUM
FISH & RICHARDSON
225 FRANKLIN STREET
BOSTON MA 02110-2804

EXAMINER	
COURTENAY	
ART UNIT	PAPER NUMBER
2755	4

DATE MAILED: 09/02/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 08/720,092	Applicant(s) Kahn et al.
	Examiner St. John Courtenay III	Group Art Unit 2755

☒ Responsive to communication(s) filed on *Sep 27, 1996* .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-25* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-25* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on *Sep 27, 1996* is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Detailed Action

This first office action is responsive to application 08/720,092, filed Sept. 27, 1996. Claims 1– 25 are presented for examination on the merits.

Objections to the Drawings:
The drawings are objected to because Figures 1 ...? are not designated by a legend such as "Prior Art". The legend is necessary in order to clarify what applicant's invention is. MPEP § 608.02(g). Appropriate correction is required.

Objections to the claims 1-25:
"Knowbot" is a registered trademark subject to change over time (see page 4 of instant application). Applicant has the burden of distinctly claiming the instant invention. Appropriate correction is required.

Non-patent prior art documents submitted on floppy disk or CD-ROM in Adobe Acrobat PDF format (preferred), or PostScript, or in Microsoft Word, WordPerfect, or ASCII formats are strongly encouraged to help reduce the paper burden on the Office and to facilitate the electronic searching and archiving of non-patent literature.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> *A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*
>
> *Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned*

by the same person or subject to an obligation of assignment to the same person.

Claims 1– 19 are rejected under 35 U.S.C. § 103 as being unpatentable over Antes, Gary M., "Let your 'knowbots' do the walking," Computerworld, May 13, 1991, pp(2), in view of Steinberg, Don, "Demon knowbots (intelligent software robots)," PC-Computing, v3, n1, pp(4), Jan, 1990.

As per claim 1:
Antes discloses the invention substantially as claimed:

Antes teaches a method for use in a distributed system for processing a knowbot program that has the ability to move from node to node in the distributed system [e.g., page 1, line 24].

Antes teaches in an operating environment in each of the nodes, providing service facilities useful to the knowbot program [e.g., page 1, line 30].

However, Antes does not *explicitly* disclose the following additional limitations:

Steinberg teaches in the operating environment running a supervisor process [e.g., administrative knowbots, page 3, line 3] that enables the knowbot program to make use of the service facilities but does not permit direct access by the knowbot program to facilities of the operating environment [page 3].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the system taught by Antes by implementing the improvements detailed above because it would provide Antes's system with the enhanced capability of keeping unauthorized users out [e.g., page 3, line 4].

As per claim 2:
Steinberg teaches creating a bastion object in the unrestricted environment to protect the unrestricted environment and passing it into a restricted environment within which the knowbot program is running [e.g., administrative knowbots, page 3, line 3].

As per claim 3:
Steinberg teaches the bastion object provides an interface for the knowbot program to access the service facilities in a safe manner and which is substantially the same interface as the interface that the service facilities provide in the unrestricted environment [e.g., administrative knowbots, page 3, line 3].

As per claim 4:
"Official Notice" is taken that the use of type checking on all method calls made by a program to a service facility is well known in the art (e.g., Java run-time byte code type checking) [M.P.E.P. 2144.03].

As per claim 5:
This claim is rejected for the same reasons detailed above in the rejection of independent claim 1, and also for the following additional reasons:

Antes teaches a method for use in a distributed system for processing a knowbot program that executes in one node of the distributed system, may be interrupted at almost any point in its execution, and may be moved to another node of the distributed system for further execution [e.g., page 1, line 24].

Antes teaches in the one node, capturing state and program code of the knowbot program to the other node and continuing execution at the other node from the point of interruption based on the captured state and the program code [e.g, page 1, lines 24, 31, 40-44].

As per claim 6:
Antes teaches also delivering with the captured state and the program code a transported file system or other information created during execution of the knowbot program [e.g, page 1, lines 40-44].

As per claim 7:
Antes inherently teaches the information in the transported files system or other information is accessible without executing the knowbot program [e.g., the databases disclosed by Antes are also manually accessible by the user without the use of knowbots; knowbots merely automate the searching task, pages 1-2].

As per claim 8:

"Official Notice" is taken that the use of an encoding scheme of a language interpreter is notoriously well known in the art (e.g., the Java virtual machine run-time byte code interpreter) [M.P.E.P. 2144.03].

As per claim 9:
This claim is rejected for the same reasons detailed above in the rejection of the preceding independent claims, and also for the following additional reasons:

Antes teaches a method for enabling communication with a knowbot program running in a distributed system, a knowbot service station [e.g., a knowbot policeman as disclosed by Antes, page 1, line 39], an extension, or another application [e.g., page 1, lines 39-44].

Antes teaches providing a connector mechanism [e.g,. communications knowbot as disclosed by Antes] which permits each of the knowbot programs, knowbot service stations, extensions, and other applications to identify services that it provides, and permits each of them to find services that it needs and enabling knowbot programs to communicate with knowbot service stations via connector objects [e.g,. inherently associated with the communications knowbots disclosed by Antes to effect communications between knowbots] associated with the connector mechanism [page 1].

As per claim 10:
The combination of Antes as modified by Steinburg teaches the connector object (as discussed above) is provided by a supervisor process [e.g., Administrative Knowbots as disclosed by Steinberg, page 1, line 22] running in the distributed environment and the connector object prevents uncontrolled access to a needed service [e.g., Steinberg, page 3, line 4].

As per claim 11:
Antes inherently teaches the connector mechanism which effects the functions of a connector broker and connector manager [e.g,. see the "communications knowbot" as disclosed by Antes, page 1, line 41].

As per claim 12:
"Official Notice" is taken that the use of objects consisting of data types (and methods) is notoriously well known in the art [M.P.E.P. 2144.03]. A typed

object is not a patentably distinct limitation, per se, as all objects are associated with a particular type or class.

As per claim 13:
This claim is rejected for the same reasons detailed above in the rejection of the preceding independent claims, and also for the following additional reasons:

Andtes, as modified by Steinberg, teaches a method for enabling negotiation between two unrelated knowbot programs, knowbot service stations, extensions, or other applications, in a distributed system, comprising:

∘ in an operating environment in a node of the distributed system, receiving information form one of the two knowbot programs, knowbot service stations, extensions, or other applications, concerning a transaction offered to other knowbot programs, knowbot service stations, extensions or other applications [e.g., Antes, pages 1, lines 27-32, page 2, line 1],

∘ in an operating environment in the node, receiving information from the other of the two knowbot programs, knowbot service stations, extensions, or other applications concerning a transaction in which the other of the knowbot programs, knowbot service stations, extensions, and other applications wishes to engage [e.g., see clone Knowbot, as disclosed by Antes, page 2, line 2],

∘ notifying the other knowbot program, knowbot service station, extension, or other application of the one knowbot program, knowbot service station, extension, or other application [e.g., Antes, page 1, lines 41-44],

∘ enabling the two knowbot programs, knowbot services stations, extensions, or other applications to communicate concerning the transaction [e.g., see communications knowbot as disclosed by Antes, page 1, lines 41-45].

As per claim 14:
Antes teaches the information is received from the knowbot programs by a third knowbot program [e.g., page 1, line 30].

As per claim 15:

This claim is rejected for the same reasons detailed above in the rejection of the preceding independent claims, and also for the following additional reasons:

Andtes, as modified by Steinberg, teaches a method for enabling action in an operating environment in a distributed system with respect to a knowbot program which is programmed in a language that is not fully supported by the operating environment, comprising:

• labeling a knowbot program to identify operating environment features required for full support of the knowbot program [e.g., Antes, page 1, lines 41-44],

• in an operating environment, examining the labeling of the knowbot program to determine whether the operating environment supports all of the identified features, and taking an action based on whether all the identified features are supported [e.g., Antes, page 1, lines 41-44].

As per claim 16:
Antes teaches the action comprises sending the knowbot program to another operating environment for processing [e.g., page 1, lines 30-32].

As per claim 17:
Antes teaches the action comprises retrieving non-program specific data from the knowbot program [e.g., page 1, lines 30-32].

As per claim 18:
This claim is rejected for the same reasons detailed above in the rejection of the preceding independent claims, and also for the following additional reasons:

Andtes, as modified by Steinberg, teaches a method for aiding communication with a knowbot program executing in operating environments provided at nodes of the distributed system (as discussed in the rejections detailed above), comprising

o maintaining a name space that uniquely identifies types of information to be interchanged [e.g., Antes, page 1, line 41, i.e., a name is inherently associated with the specific format required, as taught by Antes],

o using a name within the name space to identify the type of information to be interchanged [e.g., Antes, page 1, line 41].

As per claim 19:
Antes teaches the knowbot program registers an interface which includes the name of a type of information that is to be interchanged [e.g., Antes, page 1, line 41, i.e., a name is inherently associated with the specific format required, as taught by Antes].

Claims 20 – 25 are rejected under 35 U.S.C. § 103 as being unpatentable over Antes, Gary M., "Let your 'knowbots' do the walking," Computerworld, May 13, 1991, pp(2), in view of Steinberg, Don, "Demon knowbots (intelligent software robots)," PC-Computing, v3, n1, pp(4), Jan, 1990, and further in view of Rasmus, Daniel W., "Intelligent Agents," PC AI, Jan/Feb. 1995, pp(8).

As per claim 20:
Antes & Steinberg disclose the invention substantially as claimed, as discussed above.

However, Antes & Steinberg do not *explicitly* disclose the following additional limitations:

Rasmus teaches a method for controlling the timing of execution of an action associated with a knowbot program running in an operating environment provided at a node of a distributed system, comprising,

o providing a trigger protocol in the operating environment [page 5, as marked, IBM IntelliAgent for Windows],

o enabling the knowbot program (i.e., agent program) to register a condition with the operating environment [inherent],

• causing the operating environment to trigger the execution of the action upon the occurrence of the condition [page 5, as marked].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the system taught by **Antes & Steinberg** by implementing the improvements detailed above because it would provide the system taught by **Antes & Steinberg** with the enhanced capability of an event-driven interface agent that monitors directories, launches applications, manages files, and sorts, manages, and responds to email wherein the agent is triggered by information events and by time events [e.g., page 5, as marked].

As per claim 21:
Rasmus inherently teaches the trigger protocol defines trigger statements each of which identifies at least the condition and the action [page 5, as marked, IBM IntelliAgent for Windows].

As per claim 22:
Official Notice is taken that the use of a table of registered trigger expressions responsive to designated events is well-known. [M.P.E.P. 2144.03].

As per claim 23:
Rasmus teaches execution is triggered by a program contained in the knowbot (i.e., agent) program [page 5, as marked, IBM IntelliAgent for Windows].

As per claim 24:
This claim is rejected for the same reasons detailed above in the rejection of the preceding independent claims, and also for the following additional reasons: **Antes & Steinberg & Rasmus** teach a method for controlling interaction between a knowbot program and an application running in an operating environment provided at a node of a distributed system, as detailed in the rejections above. "Official Notice" is taken that the use of registered trusted programs is well known in the art [M.P.E.P. 2144.03].

As per claim 25:
This claim is rejected for the same reasons detailed above in the rejection of the preceding independent claims, and also for the following additional reasons: "Official Notice" is taken that the use of safe extensions to an

operating environment is well known in the art (e.g., the Java virtual machine run-time environment wherein unsafe Java programs which access memory directly are preempted from doing so by the Java virtual machine) [M.P.E.P. 2144.03].

Prior Art not relied upon:

Please refer to the references listed on the attached PTO-892 which are not relied upon in the claim rejections detailed above.

Objective — Reducing and Simplifying the areas of disagreement:

o The Examiner solicits Applicant's cooperation in *reducing and simplifying the areas of disagreement* by doing the following: 1) amending the independent claims in a manner fully supported by Applicant's specification to *clearly distinguish* over the prior art of record, AND/OR 2) directing *clear* and *concise* arguments to the *specific claim language and claim elements* that Applicant feels are not fairly taught or suggested by the cited prior art of record. Applicant should cancel claims where appropriate. Applicant should preferably avoid arguing general differences between the cited references and the instant invention as disclosed in the specification. Your cooperation is appreciated.

Requested Format of Amended Claims:

o Please help expedite the prosecution of this application by including the text of all claims which remain in the case in your amendment response. Please label each amended claim as (AMENDED), or (TWICE AMENDED), or (THREE TIMES AMENDED), etc., after the claim number. Please label each unchanged claim (UNCHANGED) after the claim number [meaning the claim is the same as originally filed]. Please label each canceled claim (CANCELED) after the claim number. The text of a canceled claim does not need to be included. This format is not mandatory, however, it will help expedite the processing of your application. Your cooperation is appreciated.

• The Examiner requests that your amendment response be in paper form accompanied by a 3 ½ inch IBM format floppy disk which contains a file copy of your amendment response in Adobe Acrobat PDF format (preferred), or in any version of Microsoft Word or WordPerfect, or in ASCII text format. Please include all pending claims, as detailed above. Only the paper copy will be entered — your floppy disk file will be considered a duplicate copy. Signatures are not required on the disk copy. The floppy disk copy is not mandatory, however, your cooperation is appreciated.

How to Contact the Examiner:

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to St. John Courtenay III whose voice telephone number is (703) 308-5217. A voice mail service is also available at this number.

- **All responses sent by U.S. Mail should be mailed to:**
  Commissioner of Patents and Trademarks
  Washington, D.C. 20231

- **Hand-delivered responses should be brought to Crystal Park Two, 2021 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).** All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses directly to the Examiner.

All FORMAL or OFFICIAL faxes must be signed and sent to either (703) 308-9051 or (703) 308-9052.
OFFICIAL faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the Office, e.g., Finance Division for fee charging, etc.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.
ST.JC/ST.JC, Monday, August 24, 1998